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**Inventor:** MIYAZAKI TAIZO (JP); HANIU TOMOYUKI (JP);  
MASAKI RYOSO (JP)

**Applicant:** HITACHI LTD (JP);; MIYAZAKI TAIZO (JP);; HANIU  
TOMOYUKI (JP);; MASAKI RYOSO (JP)

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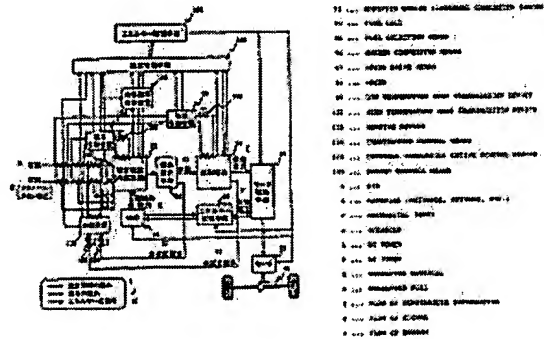
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A fuel cell (93) which generates energy by using reaction product from a modified engine (92) which acts as an internal combustion engine for a modifier and power generation and has a piston performing a compression work and a plurality of reaction chambers, wherein the internal temperature of the reaction chambers provided in the modified engine (92) is raised to above the self igniting temperature of material in the atmosphere in the material reaction chambers by using heat from a plurality of heat sources and a plurality of unreacted fuel for heating the material supplied to the modified engine (92) in a fuel cell system having the modified engine (92), a partial oxidation reaction enabling both mechanical power and hydrogen to be produced is made, and the mechanical power produced controls the heat balance of the system so as to increase a modifying efficiency by being used for a steam modifying reaction as a heat absorbing reaction generating much hydrogen in the other reaction chamber.



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